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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, KIMBERLY T

ART. UNIT PAPER NUMBER

1774

DATE MAILED: 11/29/2001

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/507,769

Applicant(s)

PASSMAN ET AL.

Examiner

Kimberly Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____ .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____ .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. **Claims 1-16**, drawn to a fiber reinforced composite material, classified in class 428, subclass 292.1.
- II. **Claims 17-20**, drawn to a process of applying a coating, classified in class 427, subclass 421.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as laminating (i.e. adhering) the material to coat the second polymeric layer instead of thermal spraying.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.


During a telephone conversation with Blake T. Biederman on November 6, 2001 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Claim Objections

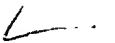
Claim 11 is objected to because of the following informalities: In line 13 of claim 11, the phrase "the fiber reinforced polymer with" should be changed to "the fiber reinforced polymer substrate with." Appropriate correction is required. 

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 5, 9, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In **claims 3 and 13**, it is unclear what is meant by the symbols "+" and "/" in the phrase "bisphenol F/epichlorohydrin + diethylenetriamine." Perhaps Applicants should either change the symbol "+" to the word "and" and cancel the symbol "/" or Applicants should amend the 

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claim to read "epoxy material comprising bisphenol F-type epichlorohydrin and diethylenetriamine."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al., U.S. Pat. No. 5,840,386.

Hatch shows a sleeve for a liquid transfer roll comprising a carbon fiber-reinforced plastic inner tube (substrate) (claim 1 and column 6, lines 26-29), at least one compressible intermediate layer of polyurethane elastomer (first polymeric layer) (column 3, lines 50-51 and column 5, lines 54-56), a reinforced intermediate tube comprising polyurethane elastomer ^{particulate} (second polymeric layer) (claim 1), and a thermally sprayed coating (column 4, lines 32-36).

Hatch shows that the intermediate layers comprise a polyurethane elastomer or silicone (column 5, lines 54-56) and that the reinforced intermediate tube may comprise glass fibers (ceramic particulate) (column 6, lines 26-29). Hatch shows that the intermediate tube (first polymeric layer) comprises the same materials as the inner tube (substrate) such as metal wires (metal particulate) (column 5, lines 67 to column 6, lines 1-2 and column 5, lines 13-21). Hatch also shows that the intermediate tube comprises a plastic reinforced with glass fiber (silicon oxide particulate) (column 6, lines 26-29).

Hatch does not show that the intermediate tube (second polymeric layer) contains about 20 to 85 weight percent of particulate as in instant claims 6-7. Hatch does not show that the coating attaches to the substrate with a tensile strength of at least about 10 Mpa as in instant claim 8 nor that the size of the particulate material is less than about 500 μ m as in instant claim 9. Further, Hatch does not show that the intermediate compressible layer (first polymeric layer) and intermediate tube (second polymeric layer) have thicknesses of about 0.002 to 0.127mm and about 0.050 to 3.2mm, respectively, as in instant claim 10. However, where the general conditions of a claim are disclosed by the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.

Claims 1-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al., U.S. Pat. No. 5,840,386 in view of Hess et al., U.S. Pat. No. 3,698,053.

Hatch shows a sleeve (multi-layer coating) for a liquid transfer roll (fluid metering roll) adapted to be mounted around a mandrel (substrate and cylindrical roll) comprising an epoxy resin inner tube (first polymeric/epoxy layer) (claim 1 and column 5, lines 13-19), a glass fiber- or nickel metal wire-reinforced (particulate) intermediate tube comprising epoxy resin (second polymeric/epoxy layer) (claim 1 and column 5, lines 67 to column 6, lines 1-2 and column 5, lines 13-21), and a thermally sprayed coating (column 4, lines 32-36) comprising chromium oxide (column 4, lines 14-24).

Though Hatch shows that the intermediate tube is substantially thicker than the inner tube (column 7, lines 35-40), Hatch does not show that the inner tube has a thickness of about 0.005 to 0.076 mm and that the intermediate tube has a thickness of about 0.5 to 1.27mm as in instant claims 10 and 12. However, where the general conditions of a claim are disclosed by the prior

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art (i.e. thickness), it is not inventive to discover the optimum or workable ranges by routine experimentation.

Hatch does not show that the sleeve is attached to the mandrel with a tensile strength of at least about 10 Mpa as in instant claim 1; however, the tensile strength is another condition of a claim which is optimizable by routine experimentation.

Hatch does not show that the mandrel (substrate) is a fiber reinforced polymer which contains carbon fibers as in instant claims 1, 11, and 14.

Hess shows a cylindrical mandrel comprised of an epoxy polymer matrix reinforced with carbon fibers (column 2, lines 1-10). It would have been obvious to one of ordinary skill in the art to use the mandrel of Hess in Applicants' invention because it is well known in the art that such a mandrel can be utilized in paper making machinery (column 1, lines 10-12).

Claims 1, 3, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch et al., U.S. Pat. No. 5,840,386 in view of Hess et al., U.S. Pat. No. 3,698,053 in further view of Fujita et al., U.S. Pat. No. 5,296,582.

Hatch and Hess are relied upon as above for claims 1 and 11. Hatch does not show that the inner and intermediate tube epoxy material is a bisphenol F/epichlorohydrin and diethylenetriamine as in instant claims 3 and 13.

Fujita shows a curable epoxy resin composition for use in molding materials and laminates comprising bisphenol F/epichlorohydrin and diethylenetriamine (column 5, lines 3-7 and column 6, lines 67-68 to column 7, lines 1-16). It would have been obvious to one of ordinary skill in the art to use this epoxy resin because it is known in the art that the resin has

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excellent tensile characteristics and is widely used in composite materials such as carbon fiber reinforced plastics.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Nguyen whose telephone number is (703) 308-8176. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-3559 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Kimberly Nguyen
Examiner
Art Unit 1774
November 16, 2001

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

A handwritten signature in black ink, appearing to read 'Cynthia H. Kelly', with a long, sweeping horizontal stroke extending to the right.